

Synthesis of tolyl carbazyl derivatives and electroluminescence characteristics according to substituent position

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We have synthesized a new HTL material, 9,9'-Di-p-tolyl-9H,9'H-[3,3']bicarbazolyl(p-TBC), 9,9',9''-Tri-p-tolyl-9H,9'H, 9''H-[3,3';6',3'']tercarbazole(p-TTC), 9,9'-Di-p-tolyl-6,6'- bicarbazolyl - 9H,9'H-[3,3'] bicarbazolyl(p-TBCBC), 9,9'-Di-m-tolyl-9H,9'H-[3,3'] bicarbazolyl(m-TBC),9,9',9''-Tri-m-tolyl-9H,9'H,9''H-[3,3';6',3'']tercarbazole(m-TTC) and 9,9'-Di-m-tolyl-6,6'-bicarbazolyl-9H,9'H-[3,3']bicarbazolyl(m-TBCBC), To overcome the limitations of existing HTL materials. We characterized electrochemical and optical properties by Cyclic Voltammetry, UV-Vis and photoluminescence analysis. OLEDs devices using p-TTC as HTL layer showed luminescence efficiency of 4.48cd/A and 2.31 lm/W.